

IN THE CLAIMS

The following is a complete listing of the claims now pending. This listing replaces all earlier versions and listings of the claims.

Claim 1 (currently amended): A printing control apparatus comprising:

plural expansion processing means for expanding printing data of a predetermined format to image data of a format to be output to a printer, wherein the output to the printer is performed on a segment basis;

calculation means for calculating, before the expansion processing is performed by said plural expansion processing means, a processing time necessary to expand the printing data to the image data for each segment; and

scheduling processing means for scheduling the expansion processing for each segment by said plural expansion processing means, based on the processing time calculated by said calculation means,

wherein each of said plural expansion processing means has band raster memory areas, independent of the other plural expansion processing means, to hold output images, and

wherein said scheduling processing means checks a plurality of schedule patterns obtained by assigning each segment to each band raster memory area, specifies one of the plurality of schedule patterns that has the smallest number of temporary band rasters, and schedules which segments should each of said plural expansion processing means perform the expansion process on.

Claim 2 (previously presented): An apparatus according to Claim 1, further comprising transfer means for transferring the expanded image data to the printer,
wherein said scheduling processing means further comprises judgment means for judging, for each segment, based on the processing time calculated by said calculation means, whether or not the expansion processing is to be performed by said expansion processing means before the transfer of the image data is started.

Claim 3 (original): An apparatus according to Claim 2, further comprising compression means for compressing the expanded image data for the segment to which it was judged by said judgment means that the expansion processing is to be performed by said expansion processing means before the transfer of the image data is started.

Claim 4 (previously presented): An apparatus according to Claim 1, further comprising:
reception means for receiving output data from a data processing apparatus; and
conversion means for converting the received data into printing data of a predetermined format.

Claim 5 (previously presented): An apparatus according to Claim 1, wherein the printing data of the predetermined format is intermediate data of a format classified for each segment.

Claim 6 (currently amended): A data processing method for a printing control apparatus comprising:

an expansion processing step, of expanding, using plural expansion processing means, printing data of a predetermined format to image data of a format to be output to a printer, wherein the output to the printer is performed on a segment basis;

a calculation step, of calculating, before the expansion processing is performed by the plural expansion processing means, a processing time necessary to expand the printing data to the image data for each segment; and

a scheduling processing step, of scheduling the expansion processing for each segment by the plural expansion processing means, based on the processing time calculated in said calculation step,

wherein each of the plural expansion processing [[means]] means has band raster memory areas, independent of the other plural expansion processing means, to hold output images, and

wherein said scheduling processing step includes checking a plurality of schedule patterns obtained by assigning each segment to each band raster memory area, specifying one of the plurality of schedule patterns that has the smallest number of temporary band rasters, and scheduling which segments should each of the plural expansion processing means perform the expansion process on.

Claim 7 (previously presented): A method according to Claim 6, further comprising a transfer step, of transferring the expanded image data to the printer,

wherein said scheduling processing step includes a judgment step, of judging, for each segment, based on the processing time calculated in said calculation step,

whether or not the expansion processing is to be performed in said expansion processing step before the transfer of the image data is started.

Claim 8 (previously presented): A method according to Claim 7, further comprising a compression step, of compressing the expanded image data for the segment to which it was judged in said judgment step that the expansion processing is to be performed in said expansion processing step before the transfer of the image data is started.

Claim 9 (previously presented): A method according to Claim 6, further comprising:

a reception step, of receiving output data from a data processing apparatus; and

a conversion step, of converting the received data into the printing data of a predetermined format.

Claim 10 (previously presented): A method according to Claim 6, wherein the printing data of the predetermined format is intermediate data of a format classified for each segment.

Claim 11 (currently amended): A storage medium which stores a computer-readable program to control a printer, said program comprising:

code for an expansion processing step, of expanding, using plural expansion processing means, printing data of a predetermined format to image data of a

format to be output to a printer, wherein the output to the printer is performed on a segment basis;

code for a calculation step, of calculating, before the expansion processing is performed by the plural expansion processing means, a processing time necessary to expand the printing data to the image data for each segment; and

code for a scheduling processing step, of scheduling the expansion processing for each segment by the plural expansion processing means, based on the processing time calculated in said calculation step,

wherein each of the plural expansion processing [[means]] means has band raster memory areas, independent of the other plural expansion processing means, to hold output images, and

wherein said scheduling processing step includes checking a plurality of schedule patterns obtained by assigning each segment to each band raster memory area, specifying one of the plurality of schedule patterns that has the smallest number of temporary band rasters, and scheduling which segments should each of the plural expansion processing means perform the expansion process on.

Claim 12 (previously presented): A medium according to Claim 11, wherein said program further includes code for a transfer step, of transferring the expanded image data to the printer,

said scheduling processing step includes a judgment step, of judging, for each segment, based on the processing time calculated in said calculation step, whether or not the expansion processing is to be performed in said expansion processing step before the transfer of the image data is started.

Claim 13 (previously presented): A medium according to Claim 12, wherein said program further includes code for a compression step, of compressing the expanded image data for the segment to which it was judged that the expansion processing is to be performed in said expansion processing step before the transfer of the image data is started.

Claim 14 (previously presented): A medium according to Claim 11, wherein said program further includes:

- code for a reception step, of receiving output data from a data processing apparatus; and
- code for a conversion step, of converting the received data into the printing data of a predetermined format.

Claim 15 (previously presented): A medium according to Claim 11, wherein the printing data of the predetermined format is intermediate data of a format classified for each segment.